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ABSTRACT

The six state-based research centers of the Adult Literacy and Numeracy Australian Research Consortium (ALNARC) investigated the effects of inclusion of literacy and numeracy standards in Australia's national training packages and the standards' impact on the quality of learning and work outcomes. The six ALNARC projects, which used a case study approach, examined a diversity of industries, training materials, and training sites. Overall, the projects revealed that progress in implementing training packages and addressing literacy and numeracy in that context has been uneven. The transition from curriculum-based to training package delivery was characterized as being fraught with confusion and uncertainties. The following items were deemed necessary for improvement of literacy provision and the quality of training: more time for basic training; enhanced quality control; linkage of training to productivity outcomes; and professional development and support for trainers. Other issues identified included the

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following: the effects of implicit rather than explicit inclusion of language, literacy, and numeracy competencies in industry standards; the language and discourse of training packages; the context of training; funding issues; and access and equity issues. The projects resulted in 19 recommendations regarding further development of training packages. (The bibliography lists 134 references. An appendix lists 46 recommendations by state.) (MN)

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Adult Literacy and Numeracy Australian Research Consortium

ALNARC

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A synthesis of recent research into the effects of integrating literacy and numeracy into training packages

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Australian Research Consortium

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Edited by
Jill Sanguinetti and Robyn Hartley

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List of Acronyms

ALNARC	Adult Literacy and Numeracy Australian Research Consortium
ANTA	Australian National Training authority
AQF	Australian Qualifications Framework
DETYA	Department of Employment, Training and Youth Affairs
EBT	Enterprise-Based Teacher
ITAB	Industry Training Advisory Board
NFITC	National Food Industry Training council
RTO	Registered Training Authority
VET	Vocational Education and Training
WELL	Workplace English Language and Literacy

Executive Summary

ALNARC's six state-based research centres investigated the effects of the inclusion of literacy and numeracy standards in National Training Packages and their impact on the quality of learning and work outcomes. The six projects investigated a diversity of industries, training materials and training sites. Overall, the findings reveal that progress in implementing training packages and addressing literacy and numeracy in that context has been uneven.

Literacy in the 'back seat' in a period of transition

The introduction of National Training Packages involved a major transition in the industry training system. While enterprises, registered training organisations (RTOs), teachers and trainers are committed to making the new system 'work' in their particular sites and enterprises, there is an inevitable degree of confusion and uncertainty. Different understandings of the intent, underlying assumptions and principles of training packages have surfaced as have different agendas between different stake-holders, for example, employers and RTOs or workers and trainers. In some cases, there has been insufficient time to prepare for this transition and to fully understand the extent of changes required. In this context, attention to language, literacy and numeracy issues is in many respects taking a back seat to the main task of implementing a new system.

Variation in quality and quantity of literacy and numeracy provision

In some of the sites investigated there is a high level of awareness of literacy and numeracy issues in training and assessment and innovative ways are being developed to provide appropriate support. However, there is considerable variation in the quality and quantity of provision. There are several instances where little or no attention is being paid to literacy and numeracy.

More quality control required

Recommendations call for enhanced quality control: RTOs need to become more accountable and to demonstrate to state training authorities their proposed strategies for dealing with literacy and numeracy; systems for moderation of assessment practices across sites and RTOs need to be put in place; and closer links need to be established between literacy/numeracy experts, RTOs and industry bodies.

Professional development needs

Enterprise-based teachers (EBTs) and trainers in workplaces are being called upon to respond to diverse demands within complex policy and organisational environments. Their work requires high-level analytical skills, negotiation skills,

specialised industrial knowledge (especially in the area of occupational health and safety) and knowledge of an increasingly complex vocational education and training system, in addition to communication, instructional and assessment skills. The skills and commitment to training of teachers and trainers are a key factor in producing successful training outcomes. On-going professional development for teachers and trainers is necessary if literacy and numeracy skills are to be incorporated more effectively into industry training. Exemplars of good practice need to be identified, documented and disseminated, and networks of EBTs and trainers/assessors need to be supported across industries and RTOs.

Lack of targeted funding for literacy and numeracy training

Support for literacy and numeracy is generally not being accounted for in training plans. There is a need therefore for funding to be made available to ensure that those workers whose progress through training might be jeopardised because of language, literacy and numeracy needs receive appropriate literacy training and support.

Inflexible funding arrangements

Funding arrangements with state training authorities based on student contact hours are not an adequate basis for 'assessment-driven' training. More flexible forms of funding are required that take into account the range of tasks that enterprise-based teachers carry out in negotiating, developing and carrying out training and support programs as well as attending to literacy and numeracy issues.

Under-usage of ANTA materials

The research found little or no systematic use (by the majority of RTOs investigated) of the range of ANTA-developed materials supporting literacy/numeracy in industry, and little evidence that RTOs and trainers had access to them. Recommendations call for on-going information to be made available for RTOs, employers and trainers to aid understanding of the incorporation of language, literacy and numeracy standards in training packages, and for development and dissemination of further examples of good training and assessment practices.

Definitional confusions

There is a degree of confusion over what literacy actually means in the context of training packages. At times it is understood as the functional reading, writing, speaking and numeracy skills required by workers in order to be assessed as competent in industry standards. At other times, literacy is understood as broad generic communication skills including skills of negotiation, analysis and critical

thinking. The relationship between these two meanings of literacy/numeracy needs to be clarified so that training practices associated with each can be more clearly specified.

Lack of institutional pathways

A number of difficulties with institutional pathways were revealed. Entry into training package programs is not possible for some groups (such as unemployed people) who could benefit from such training. There are problems in establishing articulated pathways between AQF qualifications and tertiary degrees and diplomas. One report noted that there is a tension between gaining statements of attainment and completing all units of competence at the relevant AQF level in order to gain accredited qualifications. Recommendations call for broader access to training package programs and a strengthening of institutional pathways.

Literacy, numeracy and the productivity equation

Several reports noted an ambivalence between regarding training as a short-term strategy for improving productivity, versus investment in training as part of a longer term commitment to organisational learning and as an investment in future productivity. Releasing workers to be trained during paid working hours costs money, so in many cases, training is minimised when production targets have to be met. Much remains to be done to persuade employers of the value of working towards the development of a 'training culture' and acknowledging the central importance of involving employees at all levels with opportunities to gain new skills and knowledge.

Making 'built in' competencies more 'visible'

The report concludes that the 'built-in' approach to the inclusion of literacy and numeracy within industry standards brings with it a risk that in the struggle to implement training packages (and by the imperative to train and assess workers as quickly and efficiently as possible), literacy and numeracy needs will be over-shadowed. The 'built in' approach does not provide leverage for negotiating time and resources for training and support in literacy and numeracy. The recommendations in this report point out the need to explore ways of making underpinning literacy and competencies more visible and more explicit in the endorsed components of training packages.

Building literacy and numeracy into enterprise cultures

An alternative approach is to explore ways of including literacy and numeracy support and training in all aspects of training and organisational development strategies. Language, literacy and numeracy have a role in competency-based training and assessment but need not be confined to the formal training processes in which they are struggling to find a place. The challenge, perhaps, is to 'build

in' language, literacy and numeracy, not simply in a technical sense, but in the sense of encouraging, facilitating and resourcing holistic and integrated approaches to training at all levels of enterprises and organisations.

Further research required

Further research would be useful in relation to all of the above issues. In particular, research needs to be carried out into the relationship between Workplace English Language and Literacy (WELL) funded language and literacy programs and AQF training; the place of literacy and numeracy in assessment processes; how literacy and numeracy are addressed in the delivery of Certificate IV in Assessment and Workplace Training; and how literacy and numeracy training and support practices can be taken beyond the context of training packages and into the organisational and training culture of enterprises.

1 List of Recommendations

This section presents recommendations arising from the key issues identified in Section 3. The recommendations draw on those contained in the individual state reports and are cross-referenced to them.

The individual case studies with their different methods, training packages and sites, included some recommendations specific to the individual investigation and readers are referred to the appendix for the full list of recommendations put forward in each report. The recommendations are listed in order of priority and categorised under the following headings:

- **Improving the quality and quantity of literacy and numeracy provision**
  (Recommendations 1 – 3)
- **Making literacy/numeracy more visible in training packages**
  (Recommendations 4 – 6)
- **Providing professional development and support for teachers/trainers**
  (Recommendations 7 – 11)
- **Developing contextualised, multi-modal assessment practices**
  (Recommendation 12)
- **Fostering the development of a 'training culture'**
  (Recommendation 13)
- **Developing more appropriate funding arrangements**
  (Recommendation 14)
- **Building institutional pathways**
  (Recommendations 15 – 16)
- **Re-naming training packages**
  (Recommendation 17)
- **Commissioning further research**
  (Recommendation 18 – 19)

Improving the quality and quantity of literacy and numeracy provision

Concerns identified around the quality of training relate to an increased number of training providers and a wide variation in awareness of, commitment to and expertise in literacy and numeracy issues. Quality controls are clearly inadequate in this context. The state reports include suggestions to ANTA, state training authorities and ITABs as to how the overall quality of literacy and numeracy training in industry might be improved.

Recommendation 1 (to state training authorities)

State Training Authorities should require RTOs to demonstrate processes for incorporating language, literacy and numeracy. In particular, they should be required to demonstrate:

- *their proposed strategies for dealing with literacy and numeracy issues in training;*
- *their knowledge of current literacy and numeracy training resources and ways of ensuring their trainers and assessors have access to appropriate resources; and,*
- *how they will moderate assessments to ensure parity with other providers.*

(New South Wales report)

Recommendation 2 (to ANTA)

Consideration needs to be given to the establishment of an Education ITAB to regulate and monitor the standards of workplace trainers and assessors to improve quality and ensure parity of qualifications across providers

(New South Wales report)

Recommendation 3 (to ANTA)

More resources need to be developed (for example, instruction guides, video and online materials) to assist teachers and trainers to interpret training package units of competence and identify underpinning literacy and numeracy skills.

(South Australian report, Western Australian report)

Making literacy/numeracy more visible in training packages

The research supports the conclusion that the implicit inclusion of literacy/numeracy within literacy standards brings with it a risk that literacy and numeracy needs will be over-shadowed, if not lost, in the struggle to implement training packages and the imperative to train and assess workers as quickly and efficiently as possible. Various state reports suggested that ways should be found to increase the 'visibility' of literacy/numeracy in training packages.

Recommendation 4 (to ANTA)

In the current review of training packages, there is a need to explore ways of making the underpinning literacy/numeracy aspects of training more visible and more explicit. For example, through provision of broader performance criteria for literacy/numeracy competence in the range statements and evidence guides of training package units of competence. (Victorian report, South Australian report)

Recommendation 5 (to ITABs)

Where possible, representatives from state and national literacy/numeracy bodies should be included in ITAB working parties and training package development groups to ensure that literacy and numeracy perspectives will be represented.

(South Australian report)

Recommendation 6 (to ANTA/DETYA)

Further research needs to be conducted regarding the strengths and weaknesses of the two main approaches to including literacy in training packages: the implicit ('built-in') approach and the explicit 'bolting on' of literacy, communication and numeracy standards as separate units of competence. Research also needs to be conducted into how the 'built-in' and 'bolted-on' approaches could be more effectively integrated with each other.

(Queensland report, Victorian report)

Providing professional development and support for teachers/trainers

The training system has undergone a major change over the past decade and teachers/trainers are being required to operate within increasingly complex industrial environments. Ongoing professional development and support for teachers and trainers is a crucial prerequisite for positive training outcomes for individual workers and enterprises. The initiatives already taken by ANTA and by industry bodies have made a significant contribution. However, there are still large gaps in professional development and support opportunities, especially in relation to the place of literacy and numeracy in training.

The research suggests that professional development and support needs should be tackled at a number of levels and utilise a range of strategies.

Recommendation 7 (to ANTA)

Professional development in the implementation of training packages needs to be given high priority. Professional development in relation to the Certificate IV in Assessment and Workplace Training is a particular need because of the crucial role the Certificate plays in all industry assessment. (New South Wales report)

Recommendation 8 (to ANTA)

A range of initiatives need to be encouraged and supported to promote better understanding of the issues associated with the inclusion of literacy and numeracy competencies in training packages, including:

- *wider dissemination of the ANTA/DETYA information kits about literacy and numeracy issues in training packages, and,*
- *opportunities for industry trainers to attend workshops run by literacy and numeracy teachers with expertise in VET.* (South Australian report)

Recommendation 9 (to ANTA)

More exemplars of good practice need to be developed and disseminated. These should include examples of strategies teachers/trainers are developing in mediating the different agendas regarding literacy and numeracy in the workplace and examples of good practice in specific industry settings.

(South Australian report, Victorian report, Queensland report, New South Wales report)

Recommendation 10 (to RTOs)

The particular professional development and support needs of enterprise based trainers should be addressed by:

- *encouraging and supporting teachers entering VET from classroom settings to take advantage of professional development opportunities through participating in Framing the Future projects, and enrolling in post graduate study or VET teaching courses available in the TAFE system;*
- *setting up formal mentoring relationships between experienced and novice enterprise based trainers;*
- *supporting the development of EBT networks across industries and RTOs.*
- *ensuring that oral literacy, oral communication and ESL techniques are included in professional development for EBTs. (Victorian report)*
- *ensuring that strategies for setting up links with companies and analysing training needs are included in professional development.*

(National Advisory Committee)

Recommendation 11 (to ANTA, state training authorities)

There is a need for funds for literacy and numeracy support to be acknowledged in the budgetary arrangements for training package delivery. This includes the need for support for literacy/numeracy experts to work with 'at risk' trainees and for professional development to develop an awareness of appropriate support strategies. (South Australian report)

Developing and maintaining contextualised, multi model assessment practices

Recommendation 12 (to ANTA)

To assist the development and maintenance of good assessment practice, ANTA should facilitate:

- *wider dissemination of the ANTA/DETYA resource materials, which are available to assist with the incorporation of literacy and numeracy skills, and the building of capacity in construction of assessment tools for assessing training package competencies;*
- *development and dissemination within RTO and industry settings of further exemplars of good assessment practice;*

(South Australian report, Queensland report) *and,*

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- *further research into the relationship between assessment and training and how assessment can be made more fair, reliable and consistent across enterprises.* (Victorian report)

Fostering the development of a 'training culture'

The research suggested that, in general, much remains to be done to persuade employers of the value of investing in training and developing 'training cultures' within their organisations.

Recommendation 13 (to ANTA)

In order to further promote a training culture for Australian industry, ANTA should:

- *continue to work with industry to popularise the long-term benefits of investment in training;* (Victorian report) *and,*
- *consider facilitating a research project to explore factors that might contribute to increased commitment to a training culture which integrates literacy and numeracy in all levels of training within enterprises.*

(Queensland report, Western Australian report)

Developing more appropriate funding arrangements

The role of enterprise based teachers is complex. The research showed that they generally have multiple roles in the enterprise or enterprises in which they work, including a broad developmental and consultancy role. Under the circumstances, funding their work under a student contact hour formula seems inappropriate.

Recommendation 14 (to state training authorities, ANTA)

Policy needs to be developed about the appropriateness of funding the work of EBTs as student contact hours. More flexible forms of funding for RTOs, better suited to the context of training package implementation, should be investigated.

(Victorian report, Western Australian report)

Building institutional pathways

The research identified a number of difficulties with institutional pathways. Entry into training package programs is not possible for some groups who could benefit from such training. The objective of a 'seamless' qualifications system is problematic as far as articulation between VET training packages and into higher degrees are concerned.

Recommendation 15 (to ANTA/DETYA/state training authorities)

In order to strengthen institutional pathways into training package programs:

- *pre-employment courses need to be established to bridge unemployed persons into training package units in an area of work interest; and/or,*

- *links need to be developed with pre-vocational literacy/numeracy programs designed for people wanting to access vocational programs.*

(South Australian report)

Recommendation 16 (to ANTA, DETYA, state training authorities)

In order to improve articulation,

- *a better understanding of training packages across the training and education sectors needs to be developed and maintained; and*
- *pathways from AQF certificates to diploma and degree courses need to be mapped and means should be found for supporting workers who wish to proceed to higher levels of training.*

(South Australian report, Western Australian report)

Re-naming training packages

The name 'training packages' may have caused some confusion and misunderstandings and created an expectation that packages contain subject material and training guidance, similar to traditional syllabus documents.

Recommendation 17 (to ANTA)

Consideration should be given to renaming training packages, for example as Standards or Assessment Packages, to more accurately reflect their purpose.

(New South Wales report)

Commissioning further research

Given the relatively early stage of implementation of training packages and of efforts to incorporate literacy and numeracy skills within the training package framework, it is not surprising that the project identified a range of areas where further research is needed. Most state recommendations relate directly to models of literacy/numeracy in training packages and to training practices. Some, however, are concerned with a specific industry, and only those where the focus may be generalisable to other industries have been included.

Recommendation 18 (to ANTA)

Further research into the inclusion of literacy and numeracy in National Training Packages needs to be commissioned, in particular, to:

- *clarify the relationship between literacy in training packages understood as speaking reading, writing and numeracy skills, and literacy understood as a broad set of generic communication skills, so that training practices associated with each can be more clearly specified;* (Victorian report)
- *explore 'oral literacy', with an explicit focus on the language needs of NESB workers, and the oral aspects of literacy in training package training;* (Victorian report)

- *explore the relationship between WELL-funded language and literacy programs and AQF training; the contribution that WELL programs make to the effective implementation of training packages; and whether or not literacy training strategies used in WELL programs could be applied to support literacy in AQF training generally;* (Victorian report)
- *explore the relationship between settings and styles of instruction and the 'spin-off' effect of incidental literacy and numeracy learning in industry training;* (Victorian report)
- *explore the relationship between literacy / numeracy needs and assessment practices; in particular, to explore how literacy and numeracy issues affect the validity and reliability of assessment; how language, literacy and numeracy needs affect the demonstration of competence at assessment; what sort of supports assessors give to people with literacy and numeracy needs; and how can language, literacy and numeracy needs identified at the point of assessment can best be addressed in follow-up training;* (Victorian report)
- *investigate the various guidelines and resourcing arrangements that are in place within RTOs in relation to determining training outcomes and teacher workloads;* (Western Australian report) *and*
- *document learners' pathways between schools, TAFE, work-based training and tertiary training.*

Recommendation 19 (to ANTA)

In addition, ANTA should commission:

- *a national survey of the way the Certificate IV in Assessment and Workplace Training is delivered (modes, cost, duration) and how literacy and numeracy are addressed in that delivery;* (NSW report) *and*
- *models of good practice in assessment and training which incorporate literacy and numeracy awareness.* (NSW report)

1 Background to the research

2.1 Introduction

This report brings together findings from research on literacy[1] in training packages undertaken by the six university-based research centres that make up the Adult Literacy and Numeracy Australian Research Consortium (ALNARC). The six centres are at the University of Technology in NSW, Victoria University in Victoria, Griffith University in Queensland, the University of Tasmania, the University of South Australia and Murdoch University in Western Australia. The research was funded by the Australian National Training Authority (ANTA) through the Department of Employment, Training and Youth Affairs (DETYA).

In June 1999, directors of the six ALNARC centres undertook to investigate the impact of the inclusion of literacy and numeracy standards in industry training packages on the quality of learning and work outcomes. Each state centre was responsible for undertaking a locally-based research project investigating the effects of the integration of literacy and numeracy in industry training based on national training packages. Each research project was supported by a local reference group which included industry representatives, training provider representatives and academic educational researchers.

This synthesis report brings together the findings and recommendations of the six state reports, each of which is available as a separate publication. It addresses how, and to what extent, literacy and numeracy needs are being addressed in training in selected industries; the progress that has been made by industry teachers and trainers in integrating literacy and numeracy into industry training and assessment; and the problems that are being encountered in the early stages of implementation. The report provides a summary of each of the state reports, discusses key issues arising from the findings, and makes a series of recommendations arising from the key issues but drawn in large part from recommendations included in the separate state reports.

1 ANTA uses the term 'literacy' to encompass 'language' (that is, English as a second language', 'literacy' (that is, the functional skills of reading and writing) and 'numeracy' (skills of calculation required in the performance of work tasks). Literacy is also understood to include workplace communication skills generally (ANTA nd (b): 7; NFITC 1996). The generic communication skills (the 'Mayer key competencies') which are explicitly included in some packages are also often categorised under the broad heading of 'literacy'.

The Australian Council of Adult Literacy (ACAL) defines literacy thus:
Literacy involves the integration of listening, speaking, reading, writing and critical thinking; it incorporates numeracy. It includes the cultural knowledge which enables a speaker, writer or reader to recognise and use language appropriate to different social situations. For an advanced technological society such as Australia, the goal is an active literacy which allows people to use language to enhance their capacity to think, create and question, in order to participate effectively in society (Senate Standing Committee on Employment, Education and Training 1991: 90).

2.2 The integration of literacy and numeracy into industry standards

In 1995, the Commonwealth, State and Territory Ministers for Vocational Education and Training agreed to incorporate English language, literacy and numeracy competencies into competency standards under an implicit rather than an explicit model. Literacy and numeracy skills that underpin the competencies had to be provided in the context of industry training, rather than be taught separately. Trainees had to show competence in industry skills defined by the Australian Qualifications Framework (AQF) and language, literacy and numeracy support and training was to be provided in that context.

Teachers and trainers were required to identify the language, literacy and numeracy competencies implicit within industry competencies and to develop strategies for literacy- and numeracy-related training and support. Workers with literacy and numeracy needs would be provided with literacy support while they were being trained and assessed in the industry competency standards. The ANTA publication *Built In, Not Bolted On* (n.d.) details some strategies that Enterprise-based teachers (EBTs) and workplace trainers would utilise in identifying and providing literacy and numeracy support.

The incorporation of literacy and numeracy into training packages raises a number of policy questions:

- How effective is this approach in improving learning and work outcomes, and how can the integrated approach be made to work more effectively?
- What are the contextual issues that impact on the implementation of training and how could these be addressed?
- Are training packages an appropriate framework for providing effective training in industrial skills as well as the language, literacy and numeracy skills and knowledges which underpin these?

The ALNARC research brief was designed to go some way to providing answers to these questions.

2.3 The six ALNARC research projects

The six state reports that form the basis of this synthesis report are titled:

1. *Communication and Catering Competencies: a case study of literacy and numeracy inclusion in a training package* (Tasmanian Centre of ALNARC)
2. *Literacy and Numeracy in the Certificate IV in Assessment and Workplace Training* (New South Wales Centre of ALNARC)
3. *Literacy and Numeracy on the Motorway: a case study of the effects of the inclusion of literacy and numeracy competencies within the civil construction industry package* (Queensland Centre of ALNARC)
4. *Investigating Literacy, Language and Numeracy In Training Packages* (South Australian Centre of ALNARC)
5. *The Literacy Factor: Adding Value to Training. Investigation of the inclusion of literacy and numeracy in training packages in the food processing industry* (Victorian Centre of ALNARC)

6. *Language, Literacy and Numeracy in National Training Packages: Case studies in aged care and hospitality* (West Australian Centre of ALNARC)

All are available as separate reports through Language Australia.

In five states, the ALNARC coordinators were the principal researchers, supported by the directors of ALNARC centres, local research advisory committees and project reference groups. The researchers collaborated with each other by means of phone, email and teleconferencing and met together in June and November 1999 and February 2000 to discuss issues and outcomes. In the sixth state (WA), a consultant was engaged to carry out the research in conjunction with that centre's local advisory committee.

The ALNARC researchers used a case study approach, focusing on different industries and different sites of provision. Table 1 summarises the industry and case study focus of each of the reports.

Table 1: Industry and case study focus of the six state research reports

State	Report title	Industry	Units & level	Case study site/s
TAS	Communication and Catering Competencies: a case study of literacy and numeracy inclusion in a training package	Community services and hospitality	Certificate III Hospitality (Catering Operations)	Rural/regional health centre
NSW	Literacy and Numeracy in the Certificate IV in Assessment and Workplace Training	Assessment & workplace training	Certificate IV in Assessment & Workplace Training	Metropolitan RTO (Also includes data from two Framing the Future projects)
QLD	Literacy and Numeracy on the Motorway: a case study of the effects of the inclusion of literacy and numeracy competencies within the civil construction industry package	Civil construction	A variety of units at Levels I and II	Two sites of the Pacific Motorway project
SA	Investigating Literacy, Language and Numeracy In Training Packages	Horticulture	Certificate III (also Levels I and II)	Metropolitan RTO
VIC	The Literacy Factor: Adding Value to Training. Investigation of the inclusion of literacy and numeracy in training packages in the food processing industry	Food processing	Certificate IV in Assessment and Workplace Training Level 1 in Communications, Food Safety, OHS and Transport and Distribution	Two metropolitan food processing factories
WA	Language, Literacy and Numeracy in National Training Packages: Case studies in aged care and hospitality	Community services, and hospitality	Levels I – III	Two regional and one metropolitan TAFE college

Each project was planned as an investigation through one or a few case studies into the extent to which literacy and numeracy were being addressed in the implementation of training packages; the effectiveness with which they were being addressed; the factors affecting the success or otherwise of implementation; and the issues that were emerging in relation to literacy and numeracy issues in training.

The case study approach has allowed for the perspectives of a variety of stakeholders to be explored. As the South Australian report noted, listening to the 'voices' of various stakeholders provides insights into a number of complex issues which have arisen in the shift from a curriculum based model to a competency-based and assessment-driven model. The six reports document the views of training administrators, workplace trainers, lecturers, management personnel of registered training organisations (RTOs), adult literacy and numeracy teachers, members of trainer networks, trainees and employers.

The research was carried out mainly between August and October 1999. Interim reports were presented at the ACAL conference in November 1999 and at the ALNARC National Forum in February 2000. Feedback from those meetings was included in the final project reports.

3 Overview of the reports

In this section, the method and findings of each of the six reports are summarised in turn.

3.1 Communication and Catering Competencies: a case study of literacy and numeracy inclusion in a training package (Tasmanian Centre of ALNARC)

Industry focus

The Tasmanian research focused on aspects of the Hospitality Training Package, in particular the Certificate III in Hospitality (Catering Operations). Training in the community services area is still in a transitional stage from the curriculum-based to the assessment-based system. Hospitality training and community services training are frequently combined.

The research included a particular focus on issues related to the special needs of rural and regional people in a decentralised environment where people and training resources are widely dispersed.

Method

Interviews and consultations were carried out with personnel involved in the delivery of the Community Services Training Package, including staff in patient services.

A multi-purpose health centre in a small regional centre of the state was chosen as a case study site. The researchers interviewed trainers, ITAB officers RTO personnel and analysed selected units within the Hospitality Training Package Certificate III (Catering Operations).

Findings

The report draws the following conclusions from consultations and interviews:

- With regard to the implementation of the Hospitality Training Package, trainers have had insufficient time to address the major shift from the curriculum-based system to the training package system.
- Despite the introduction of training packages, no major change has occurred in the way Certificate III (Catering Operations) is being delivered to regional and rural trainees, or in the way it is assessed.
- Strategies for dealing with language, literacy and numeracy have not been an initial priority with trainers. There is no additional literacy/numeracy support to assist trainees having difficulty.
- How literacy and numeracy competencies are 'present' within units of the hospitality training package is unclear. Incorporation of literacy and

numeracy in industry standards in training packages would appear to call for a more explicit reference to literacy and numeracy skills than at present.

- Regional and rural trainees miss out on services available at larger centres and in institutions such as counselling.
- In the site investigated, older rural trainees may have different literacy/numeracy practices, values and perceptions of training than their metropolitan counterparts. These factors may impact on their training. There is a clash between the culture and values of local communities and the culture and values inherent in the training provided. Bringing the two together will require a significant cultural change.

The analysis of literacy and numeracy competencies in Certificate III in the Hospitality Training Package revealed that:

- 'Communication skills' are often specifically referred to at the element, performance criteria and evidence guide level, and are always listed in key competencies.
- The dominant discourse[2] of the training package derives from the context of vocational education and training, a discourse which is unfamiliar at that site.
- That discourse is predominantly quantitative, in that the training package describes a framework for assessment rather than training requirements.
- The packages reflect a discourse which constructs the worker/trainee as a 'finished product' who has access to multiple literacies/numeracies and who is individually responsible for successful demonstration of competence. The trainer is absent within that discourse.

3.2 Literacy and numeracy in the Certificate IV in Assessment and Workplace Training (NSW Centre of ALNARC)

Industry focus

The NSW research investigated the inclusion of literacy and numeracy in the Certificate IV in Assessment and Workplace Training. This is the formal qualification that trainers and assessors in all industries are required to have.

Method

The researcher investigated the extent to which the Certificate IV provided trainers and assessors with such training by consulting with a wide range of informants and investigating the delivery of Certificate IV training by one well-

2 The term discourse is used to convey how language reflects and is embedded in sets of cultural values and power relations. Discourse is "a structuring principle of society, in social institutions, modes of thought and individual subjectivity ... Meanings do not exist prior to their articulation in language and language is not an abstract system, but is always socially and historically located in discourses" (Weedon 1987: 41).

established RTO. Three levels of literacy and numeracy competencies were taken into account: the presenter's awareness of literacy and numeracy as 'issues' in terms of how these are dealt with in the delivery of the training for the Certificate; the literacy and numeracy competence of those who are seeking to gain the Certificate IV qualification; and the literacy and numeracy competence of the workers whom the Certificate holders will train and assess.

Findings

If assessors and trainers are required to take account of language, literacy and numeracy in their assessments and training, then they need to have an awareness of literacy/numeracy related issues and be given strategies and tools for dealing with them in the training they themselves deliver. Ideally, such strategies and tools would be included in the delivery of the Certificate IV in Assessment and Workplace Training qualification.

Language, literacy and numeracy are presented in the Assessment and Workplace Training Package as essential elements in the communication process and in work performance. The report notes that concepts of literacy and numeracy that underpin the training package are very much located in the workplace and the job at hand, and operate predominantly at the level of the individual's communication skills rather than at the level of the workplace or organisation's communication processes.

Specifically, the research study found:

- There is significant variation between providers in the mode of delivery of the Certificate, and the duration and cost of the training;
- There are concerns about quality of Certificate IV training, largely because of the variation in modes of delivery, including variations in duration of training.
- The inclusion of literacy and numeracy standards in the training package has not resulted in any major change in the way in which the Certificate in delivered (with respect to the main RTO investigated).
- A more formal approach to moderation and verification could help to ensure greater consistency of assessments.
- More equitable procedures and outcomes in relation to RPL across providers need to be ensured;
- There are concerns that there are no formal processes to ensure that trainers and assessors have current experience and qualifications.
- Trainers have limited awareness of the resources that are available to them and more work is required to inform people about what is available. Trainers and assessors in training programs need to be referred to current resources and support materials to provide them with strategies and guidelines for incorporating literacy and numeracy awareness into their assessment and training.
- There is a need for some form of moderation to ensure parity among and across assessors and RTOs, a task that could perhaps be part of the role of

assessor networks. VETAB, the registration authority, could include more detailed questions about moderation in its registration procedures, for example, how, and how frequently, moderation exercises are carried out by the provider.

- It is not clear however whose responsibility it is to monitor standards. There is a belief in some quarters that the 'market' will distinguish the high quality providers from the low quality providers when it becomes apparent that the assessor or trainer does not have the necessary skills to do the job. However, the length of time that this 'sorting' could take remains a problem and trainees may lose out in the interim. The establishment of an Education ITAB, which could take responsibility for such issues, is one possible solution.
- Rich, complex definitions and understandings of literacy and numeracy should be included rather than narrow, reductionist, deficit understandings.

3.3 Literacy and Numeracy on the Motorway: a case study of the effects of the inclusion of literacy and numeracy competencies within the Civil Construction Industry Training Package (Queensland Centre of ALNARC)

Industry focus

This research focused on the Civil construction Industry Training Package. Formal implementation of the package in Queensland was finalised in October 1999. Training and assessment based on the competency standards in the package were provided prior to this as competency-based modes have been used as a basis for training in this industry since the early 1990s.

The specific focus of investigation was how training was being provided to workers employed on the Pacific Motorway project. Each of the five companies involved in the Motorway project employed at least one trainer on-site. Some trainers delivered the company training, others coordinated training delivered by outside providers.

Method

Two sites were selected as case studies and interviews were carried out with industry personnel, trainers and trainees.

Findings

At each site there was a commitment by company personnel to train all workers to Certificate III level in Civil Construction. Most of the workers at one of these sites had been trained to or assessed at Level II, and at the other site, this goal was being implemented. The commitment to training was part of the companies' contractual arrangements with the State government, based on a government

initiative aimed at revitalising the building and construction industry. Companies involved in the Motorway project had entered into an agreement to fund the training and assess the skills of their workers. Because the existing materials had been developed for the civil construction industry in general, the companies had contracted a training provider to develop materials that were especially appropriate to Motorway workers and were user-friendly. The training officers paid considerable attention to ensuring that materials were customised and contextualised for their purposes.

The principal findings of the research were:

- Both 'built-in' and 'bolted-on' approaches to literacy and numeracy were being used in training. (That is, trainers were attempting to integrate literacy and numeracy in AQF training and 'external' teachers had been engaged to give explicit literacy and numeracy training.) The teachers were concerned that workers referred to their sessions were only those seen as having problems, whereas this was not the intention in planning the program.
- There were examples of good pedagogical practice within both the 'built-in' and 'bolted-on' approaches. However, from the evidence available, it seemed that workers favoured the built-in approach because it was seen as being more relevant and a preparation for on-site work.
- Trainers who did not have knowledge of specific civil construction practices and techniques tended to lack credibility.
- In the civil construction industry, employees are hired for the life of a project, with each project varying in duration. This has an impact on what training is possible. Motorway work is also strongly influenced by weather conditions. In times of heavy rain, work ceases and because the companies cannot dismiss workers during this time, training commonly occurs when it is raining. At other times, it is often difficult for workers to be released to attend training.
- Workers had mixed feelings about training. Overall, they tended to see experience as more important than credentials. Some tensions were evident in relation to workers being released from work to attend training. Workers' commitment to training was uncertain, there was some opposition from foremen and an awareness of the possible negative effects on other crew members when a worker was absent at training.

3.4 Investigating Language, Literacy and Numeracy in Training Packages (South Australian Centre of ALNARC)

Findings

The South Australian research focused on the place of language, literacy and numeracy in the Horticulture Training Package being delivered by a TAFE Registered Training Organisation (RTO) which provided one day per week training for workers in the horticulture industry.

Method

The views of a variety of stakeholders, including trainees, were sought regarding literacy and numeracy in training packages and training sessions were observed.

Findings

Staff at the college expressed cautious optimism about the introduction of training packages, as well as a number of concerns. On the whole, trainees were positive about their training, especially the opportunities offered for peer interaction, trainer support and access to a variety of learning resources in a site away from their work. There was a strong sense that the system was in transition and that at this stage the focus was on the implementation of the training package per se, rather than on language, literacy and numeracy issues.

The main findings of the research were:

- At the site investigated, there is limited use of the literacy and numeracy information kits developed and disseminated by ANTA.
- Literacy and numeracy competencies appear to be 'buried' in the training packages. The training package coordinator, RTO manager and trainer in the study questioned the effectiveness of the implicit incorporation of literacy and numeracy competencies. They would like to see broader performance criteria in the range statements and evidence guides for units of competence, and the appropriate literacy and numeracy competencies required to gain competency in individual units need to be denoted.
- Experienced trainers utilise the previous curriculum model of literacy and numeracy competencies in delivering training packages. While this may be an appropriate approach for experienced trainers, it suggests a lack of suitable current materials.
- There was evidence throughout the study that poor literacy and numeracy skills may inhibit the successful completion of training package units, particularly at AQF levels 1, 2 and 3. Learning support for 'at risk' learners would promote more successful outcomes for these trainees.
- There appears to be a general lack of understanding of training packages across the training and education sectors.
- There are concerns about a lack of rigour in training package units which construct certificates and diploma awards. The training package model

emphasises the importance of statements of attainment that provide competency profiles for individual trainees. There seems to be a contradiction between the gaining of statements of attainment and the gaining of qualifications. Statements of attainment provide competency profiles for individuals. Points accrued by gaining statements of attainment go towards the gaining of a particular AQF level. However, it is possible that workers who accrue statements of attainment relating to their work locally may not be trained and assessed in units of competence that are essential for a particular AQF level.

- More guidance for teachers and trainers in interpreting and delivering training packages is needed. The key elements of good teaching/coaching need to be made explicit as a broader group of trainers is involved in the delivery of training package units. Exemplars of sound practice in the teaching-learning exchanges should form the basis of professional development.
- Some potential trainees (such as unemployed people, school leavers who want a qualification before seeking work and employed persons wanting a career change) are precluded from access to training package delivery because of the link between employment and training. This gap in access to training package training could be avoided by developing and accrediting pre-employment courses to be offered by private and public providers.

3.5 The Literacy Factor: Adding Value to Training. Investigation of the inclusion of literacy and numeracy in training packages in the food processing industry (Victorian Centre of ALNARC)

Industry focus

The Victorian study was based in the food processing industry, which has been a leading industry in training package implementation. The Industry Training Advisory Board (ITAB) for the industry has addressed language and literacy training needs for its workforce through a series of pilot projects and by developing a range of literacy-related training materials.

Method

Two food processing sites in Melbourne were chosen as case studies. Four enterprise-based teachers were interviewed. Three of these were at case study Site A: a full-time training coordinator who coordinates all training and works with six workplace trainers/assessors, a part-time trainer responsible for training workers in the transport and warehousing units of the food processing package, and a language and literacy teacher funded by the Commonwealth Workplace English Language and Literacy (WELL) program.

At Site B, a part-time enterprise-based teacher with a language and literacy background was interviewed. Her responsibilities include recruitment of workers to training, training workplace trainers, liaison with management, developing customised units of competency and giving individual literacy support to workers who require it.

Findings

The report notes that the enterprise-based teachers work in complex and demanding organisational environments that require them to negotiate the demands of different agendas. They use a variety of strategies aimed at ensuring that literacy-related support and assistance is available for workers being assessed at Level I. At the same time, they are working to broaden the training to include opportunities for the development of generic communication and organisational skills. In effect, they are attempting to marry two different perspectives: the broad educational understandings they bring to their work as language, literacy and numeracy teachers, and the requirement to train and assess in an industry-specific competency based framework.

Specifically, the report finds that:

- The inclusion of literacy/numeracy in industry standards has resulted in enterprise-based teachers adding value to training on a number of levels (for example, supports provided for workers using an occupational health and safety and food safety CD, key terms translated into other languages, communications activities in the Level 1 training, and language and literacy support provided informally on the factory floor). However, their literacy-related work tends to be marginalised by the constraints of the industrial context and by the fact that literacy standards are implicit and not explicitly spelt out in the endorsed components.
- Those workers with language or literacy/numeracy needs are being provided with some additional support and assistance to demonstrate competence in food safety and occupational health and safety at Level 1. However, that support and assistance is targeted at specific units of competence, in a context in which, according to the EBTs, there is insufficient time allowed for general training in underpinning language, literacy and numeracy skills.
- 'Literacy' takes on different meanings in different training contexts. In the context of assessment it is understood mainly in terms of functional reading, numeracy, or English language skills. On the other hand, there are signs that the implementation of training packages is providing workers with opportunities to develop broad communication ('soft') skills and competencies and an opening up of communication across the company (the Level 1 and the Certificate IV training at site A). The teachers were working to support and provide for literacy understood in both of these ways.

- The only explicit, structured instruction in language and literacy/numeracy at Site A was that provided by the WELL program. However, there is obviously a great deal of self-paced and incidental language and literacy/numeracy learning that takes place when people are being supported and assisted to understand the competencies and prepare themselves for assessment. This incidental learning would probably have a useful 'spin-off effect' to learning in other contexts. To what extent incidental literacy and numeracy is generalised to other contexts needs to be researched.
- The research suggests that management is expecting immediate improvements in productivity following training; there is a lack of recognition of the longer term benefits to organisational development as well as productivity. The 'bottom line' is that it costs companies to release workers to be trained during paid working hours, and in many cases, this leads managers to minimise the opportunities for effective learning to take place. There is a need for ANTA to continue to work with industry to popularise the (longer-term) benefits of investment in training.
- The conditions of funding have been identified as a constraint. Funding is based on student contact hours only and does not include resources needed to address the overall training needs and organising and consultancy work required. More flexible forms of funding that take into account the developmental aspects (and which do not commit RTOs in advance to fulfilling a certain number of student contact hours) would be more appropriate.
- The teachers in the study demonstrated a variety of approaches in addressing literacy whilst implementing training packages. The role of qualified and experienced teachers in industry training is central to successful outcomes. Because the workplace context is qualitatively different from the institutional contexts that most teachers in VET come from, teachers entering into VET training in workplaces need on-going professional development training and support.
- Other research (for example, Schofield 2000) has shown wide discrepancies in the quality of training provision across industries and across providers. Properly organised networks of EBTs would ameliorate that discrepancy and allow EBTs at different sites to share experiences and learn strategies for including literacy and numeracy from each other.
- Assessor networks also need to be established to support moderation and development of skills in making assessments. Systems of mentoring and the setting up of networks of EBTs and assessors would be another approach to supporting EBTs and increasing their skills.

3.6 Language, Literacy and Numeracy in National Training Packages: Aged Care and Hospitality (West Australian Centre of ALNARC)

Industry focus

The Western Australian research explored the inclusion of language, literacy and numeracy standards in units of the Hospitality Training Package and within Aged Care units in the Community Services Training Package.

Method

The training packages were examined and interviews were conducted with three different RTOs (one metropolitan and two regional). Interviews focused on the impact on language, literacy and numeracy requirements as training shifted from a competency-based model to a training package model.

Findings

Examination of the training packages revealed that:

- In the Hospitality Training Package (in cooking and in food and beverage), language, literacy and numeracy skills were primarily specified as underpinning skills and knowledge and were related to the Mayer key competencies which include communication and maths competencies.
- The core competencies for Community Services and the electives for Aged Care are linked to the Mayer Key Competencies. The language, literacy and numeracy requirements were more visible than for the hospitality package. Generally speaking, they were integrated into the performance criteria of the standards and specified in the range statements and the evidence guide.

Interviews with staff from the three RTOs led to the following conclusions:

- There was considerable variation in the amount of attention paid to language, literacy and numeracy requirements across the three RTOs in their planning for implementation of training packages.
- Being part of an ANTA Framing the Future staff development initiative appeared to be a major factor in contributing to effective preparation for implementation. Trainers and teachers provided with professional development showed a greater understanding of training packages and the availability of time for planning and preparation.
- There was some consensus that references to language, literacy and numeracy in the training packages were not explicit enough.
- Workers having difficulties with language, literacy and numeracy are often not identified because they compensate for their difficulties in various ways and/or staff are not trained to recognise such difficulties and provide additional support.

- Concern was expressed that the language, literacy and numeracy requirements in some of the non-endorsed components of training packages were higher than those required for the compulsory unit.
- Trainers and teachers were often not aware of industry-specific resources that were available for identifying language, literacy and numeracy requirements and for providing strategies to support trainees.
- The RTOs varied considerably in quality of leadership, in levels of awareness of language, literacy and numeracy issues and in the degree to which they took a systematic approach to addressing literacy and numeracy.
- The implementation of training packages was in its infancy in the case study sites at the time of the research and little or no customisation of training was available to employers and workers. There did not appear to be any systematic examination of existing learning materials as potential resources for the flexible delivery of language, literacy and numeracy.
- Various opinions were expressed about the introduction of the 'module load output rate' in Western Australia, whereby all providers are required to meet output targets in terms of numbers of modules delivered. On the one hand, there were concerns that this would create pressure resulting in insufficient attention being paid to identifying and developing language, literacy and numeracy competencies. On the other hand, it was felt that such targets, in the context of pressure to incorporate literacy and numeracy into training, might provide a rationale for language, literacy and numeracy experts to be engaged as enterprise-based teachers and trainers.
- There was concern that inadequate attention to language, literacy and numeracy in early training might leave some people unable to articulate to higher levels of training.
- There was concern that existing funding mechanisms do not allow for proper attention to be paid to language, literacy and numeracy standards in the training packages.

4 Common themes and issues

4.1 Introduction

The six state reports present a series of research-based snapshots that illustrate a variety of ways of handling language, literacy and numeracy in industry training at a particular point in time (mid 1999). There is considerable diversity across the reports in terms of industry areas, training options, training settings and differences in the progress of implementing training packages. However, despite that diversity, common themes emerge from the six state reports. This section of the synthesis report identifies the emerging issues which call for policy attention and further research.

It is worth noting that in most cases, the industries and sites investigated were chosen either because it was known that some attention was being paid to language, literacy and numeracy, or because such skills were seen as especially relevant to those industries. It is likely then, that the case studies represent examples of the best, and most in terms of quantity, of what is happening in regard to language, literacy and numeracy in training.

4.2 A system in transition: confusion and uncertainties in moving from curriculum-based to training package delivery

The investigation of language, literacy and numeracy in training is occurring in a system in transition. The reports illustrate in various ways that the transition from curriculum based training to training packages is an ongoing process that is far from complete. This has a number of implications.

At the broadest level, there are different understandings of the intent, underlying assumptions and principles of training packages, sometimes surfacing as quite different agendas between, for example, employers and RTOs or workers and trainers. There is a fairly high degree of uncertainty about practices as people move from the previous system to the new system. At least some of the variability of incorporation of language, literacy and numeracy standards into training is related to the uneven nature of implementation of training packages.

Change has inherent difficulties, especially if resources to implement it are limited or stretched. For example, the Tasmanian report noted that anomalies of delivery occur when trainers have insufficient time, given the day-to-day demands of their work, to prepare for the major shift from curriculum-based to training package delivery. The Western Australian report identified the importance of providing teachers/trainers sufficient time for preparation and planning in the implementation of change, and for their full understanding of the changes required.

It appears that attention to language, literacy and numeracy requirements is in many respects taking a back seat to the main task of implementing a new system. Again, time for detailed planning in an environment of change is an element in the limited attention given to language, literacy and numeracy standards.

Several of the reports indicate that trainers are using materials and methods used under the previous curriculum-based system. The South Australian report found that reliance on previously used materials has been useful in the transition period but they caution that this may be an appropriate strategy for experienced trainers only, who are very skilled in integrating literacy and numeracy competencies.

4.3 Literacy provision and the quality of training

Overall, many concerns were expressed about the quality of training and the need for more quality control in relation to training, both in relation to literacy and numeracy and more broadly.

4.3.1 Insufficient time for basic training

There is evidence in several of the reports of insufficient time allowed for basic training. The drive to train and assess as many workers as efficiently as possible resulted in loss of opportunities for literacy support and relevant training according to the Victorian report. The report suggests that more research is needed into how much training workers at Level I are given, what proportion of workers are given additional training, and what proportion of workers are able to be successfully assessed with minimum or no training.

The Queensland report also indicated that, in the construction industry where average literacy/numeracy levels are estimated to be relatively low, the time available for achieving competencies may not be sufficient for some workers.

4.3.2 Need for enhanced quality control

The variety of training provision now available under user-pays, while allowing for greater flexibility, raises concerns about quality control. There is evidence of considerable variation in the quality of provision, for example, as in the Certificate IV in Workplace Assessment and Training investigated in the New South Wales case study. The NSW study found that according to some, the 'bit of paper' is all that matters. The South Australian study found a lack of rigour in units which construct certificates and diploma awards.

There was evidence in other studies of responsible training. However, there was a general belief that moderation of assessment practices across sites and RTOs and other quality control measures would enhance the quality of provision and assist trainers and workers.

4.3.3 The linking of training to productivity outcomes

Several reports noted tensions and contradictions between short term expectations of productivity outcomes and the construction of training as investment in organisational learning. It costs companies to release workers to be trained during paid working hours, so in many cases, opportunities for effective training are insufficient.

A related issue is the fact that training is often fitted into 'down time' and therefore becomes an 'add-on' rather than an important activity in its own right. For example, training time in the civil construction industry is often determined by the weather (training tends to occur when rain interrupts work). On the one hand, this is an efficient use of forced idleness in paid hours. On the other hand, it makes planning almost impossible and tends to undermine commitment to training.

4.3.4 Professional development and support for trainers

Teachers/trainers are working in increasingly complex environments and require specialised training and on-going professional development to handle the diverse demands placed on them. They are required to assist in the development of, and to negotiate training plans; to adapt to the management culture of specific enterprises; to have knowledge of industrial issues and specific industrial skills; and to be skilled as teachers and trainers. RTOs vary in their commitment to, and the value they place on, professional development of trainers. There are concerns that insufficient attention is being paid to professional development for enterprise-based teachers and workplace trainers.

A common theme was the need for information about training packages and the incorporation of language, literacy and numeracy standards to be made to RTOs on a continuing basis. The materials developed by ANTA are generally seen as valuable but overall, the reports found that they were not being used in a systematic way. It is clear that there is a need for ANTA materials and other information to be disseminated to RTOs, on a continuing basis.

Several reports noted that *Framing the Future* projects have had a positive effect for those involved. They provided a useful framework for working with training packages and allowed teachers/trainers to explore issues together.

4.4 The place of literacy and numeracy in training

4.4.1 Notions of language, literacy and numeracy in training packages

With the 'built-in' model, language, literacy and numeracy skills are understood as underpinning industry competency standards. To a degree, how 'literacy' is understood as a component of training packages depending on the industrial context and workplace contexts in which training and assessment are being carried out. There is a tendency therefore for 'literacy' and 'numeracy' to be constructed as functional skills. Those who lack basic literacy and numeracy

skills might be unable to acquire and demonstrate competence in the required industry standard because of that lack. At the same time, the ANTA definition of literacy in the context of training packages includes broad, generic communication skills. However, with the emphasis on assessment in individual units of industrial competence, the broader notion of literacy tends to become lost.

The Victorian report suggested that the two understandings of literacy (functional and generic) need to be clarified, and the relationships between them unpacked and theorised, so that the training practices associated with each can be more clearly specified.

In the South Australian research, all stakeholders in the delivery of training packages acknowledged the importance of doing more than providing learners with functional literacy skills. They considered, however, that the various literacies were not sufficiently described in training package units, even though they were essential to sound training. Similarly, the Tasmanian report noted that description of literate and numerate activities is not specified in the detail that reflects on-the-job performance, and some units are cursory in their inclusion of literacy and numeracy competencies.

The Victorian report also noted that despite the fact that the majority of worker/trainees were of non-English speaking background, there was insufficient attention paid to language (or English as a Second Language) needs in that context.

4.4.2 Variations in quality of provision and effective incorporation of literacy and numeracy

Several of the reports revealed elements of flexible support in the incorporation of language, literacy and numeracy requirements into training. There were examples of appropriate support, relevant and user-friendly training materials, flexibility and good understanding of the issues. Others, however, noted that the inclusion of language, literacy and numeracy standards in training packages had made little difference to training practices and there was little or no evidence that any attention was being paid to literacy and numeracy needs.

RTOs involved in the same areas of training varied considerably in the attention they paid to language, literacy and numeracy requirements in their planning for implementation of the packages, as the Western Australian report showed. Similarly, the New South Wales report noted great variety in the way that people could gain the Certificate IV in Assessment and Workplace Training qualification. Overall, there was little or no acknowledgement of literacy/numeracy issues in training and a significant difference in cost of training, length of time taken and modes of delivery across sites.

Employer commitment to training varied across the sites investigated in the project. However, even where there was commitment to training in general and to the inclusion of literacy and numeracy specifically, it seems fair to conclude that literacy and numeracy were not necessarily a priority. It seemed

that in the midst of pressures to maintain production targets and the pressure to implement the packages, opportunities for attention to the literacy and numeracy needs of individual workers were being lost.

The reports seem to indicate that there is in fact very little training in literacy and numeracy being provided in the course of industrial training. Workers with literacy difficulties can be invisible and/or hide their difficulties. Teachers and trainers do not always have the skills to identify and support trainees who are experiencing difficulties. Workers may become anxious if the gaps in the their literacy/numeracy skills are highlighted and viewed negatively. Others may become frustrated and drop out if literacy/numeracy issues are not dealt with.

4.4.3 The effects of implicit, rather than explicit inclusion of language, literacy and numeracy competencies in industry standards

'Inclusion' or 'incorporation' does not refer to any active processes of inclusion, but to an acknowledgment that language, literacy and numeracy competencies are already there, in the sense that industrial competencies are underpinned by, and assume, a certain level of language, literacy, numeracy and/or communications skill. The onus is upon teachers and trainers to analyse separate units of industry competence, identify the implicit literacy competencies and find ways of 'providing support' to workers in relation to these in the course of training and assessment. There is a high degree of analytical sophistication and educational expertise required to carry out such analyses on an on-going basis. Not all EBTs or workplace trainers would have the resources to do this work.

Each of the six reports commented on the effects of the implicit, rather than explicit, inclusion of literacy in training packages. Overall, there was a consensus that the 'invisible' nature of language, literacy and numeracy skills created a difficult job for teachers and trainers and did nothing to reinforce the significance of literacy and numeracy provision. For example, the South Australian, Western Australian and NSW reports suggested that literacy and numeracy competencies are 'buried' in the training packages.

The Victorian report noted that implicit, as opposed to explicit, inclusion provided no strong basis for negotiating training time for literacy/numeracy-related training. It was suggested that finding ways of making literacy/numeracy more explicit and more visible within the endorsed components of training packages would be one way to bring literacy/numeracy to the attention of industry training personnel and encourage them to value and acknowledge literacy/numeracy as key components of training.

It appears that the implicit model is a framework for effective literacy support practices in cases. In other cases, however, it appears to be inadequate to ensure literacy/numeracy needs are addressed. Several reports suggested it may be necessary to re-visit this issue and to find ways of making literacy and

numeracy competencies more explicit in the endorsed components, in order to make the issue more visible and to make trainers more accountable for literacy/numeracy outcomes.

It seems that the 'assessment-driven' model of provision, in combination with the 'built in' approach to training tends to minimise the need for teaching or support to be provided. Opportunities for the development of underpinning language, literacy and numeracy skills in the course of industry training are also minimised.

At the lower AQF Levels (Levels 1 and II) training need only be provided 'post assessment' – that is, training or support only needs to be provided in the case of an unsuccessful assessment of a particular unit of competence, and would therefore be targeted as precisely as possible to that unit of competence. It seems that if literacy and numeracy skills are to be a significant focus of training, more holistic and more structured approaches would be required.

An additional factor is the effect of oral assessment at Levels I and II. Oral assessment may mean that trainers are not alerted to literacy/numeracy needs in terms of reading and writing skills which will be required at higher levels if workers are to be successful in demonstrating competence at higher levels. However, it takes time and effort to build up literacy skills. Oral assessment has many advantages but leaves open the question of how textual literacy needs are to be identified early enough.

4.4.4 Lack of access to literacy and numeracy expertise

These reports show that a considerable amount of expertise has been developed around issues of workplace literacy and numeracy by individual EBTs. However, it seems that RTOs and trainers have insufficient access to that expertise. The expertise developed by individual EBTs could be made more widely available through case studies of good practice and professional development seminars.

The Workplace English Language and Literacy (WELL) program provides explicit, structured instruction in the language, literacy and numeracy components of industry standards. The Victorian report noted that the relationship between the WELL program and the addressing of language and literacy/numeracy issues in the implementation of training packages generally needs to be further investigated, and that strategies applied in WELL programs could be usefully applied in AQF training generally.

4.4.5 Under utilisation of industry specific resources for language, literacy and numeracy

There was evidence from a number of the reports that trainers were not aware of industry specific resources for language and literacy/numeracy training. Professional development kits for workplace trainers and assessors that provide strategies for identifying language, literacy and numeracy skills required for workplace training and assessment were not being used. The need for better dissemination of existing materials was apparent.

Several reports also referred to a need for development of further examples or case studies of good practice and other forms of practical assistance for RTOs and trainers.

4.5 The language and discourse of training packages

4.5.1 The discourse of training packages

Several of the reports included a critical analysis of the language of training packages. The Tasmanian report includes a discourse analysis of the hospitality training package. The main conclusions of that analysis were that the dominant discourse derives from the context of vocational education and training. That discourse is predominantly quantitative, reflecting the fact that the training package is fundamentally about requirements of assessment rather than what is required in training. The worker is constructed as a 'finished product', equipped with a set of pre-defined skills and competencies. The package links worker/trainee and competencies in a framework of individual responsibility, rather than shared responsibility as a member of a team or workplace.

4.5.2 The language of training packages

The New South Wales report notes that reading training packages requires particular skills in comprehension and interpretation that come from training and experience. The research found some evidence that trainers and assessors do not necessarily read the training package itself and rely on the RTO to have read it. There was a suggestion from the NSW report that teachers and trainers would engage more with the training packages themselves if they were to be written in 'plain English'.

4.6 The context of training

4.6.1 Knowledge of specific work cultures and practices

The Queensland report showed that teachers lacked credibility with workers if they did not have knowledge of specific work practices and techniques. The ability to identify underpinning literacy and numeracy competencies and to teach these in context rests largely on the teacher's knowledge and experience of specific work cultures. This is especially the case for 'external' teachers/trainers who visit sites to train workers for a limited period of time. There is an area of over-lap between teaching industrial 'content' and teaching the words and concepts that carry the content. EBTs employed to give support in literacy and numeracy often find themselves teaching the content, for example in the Level I Occupational Health and Safety. Teaching literacy and numeracy purely in the context of work-based knowledge blurs the disciplinary distinctions and in so doing opens up a number of thorny issues: how EBTs are meant to gain the relevant industrial knowledge; whether or not they should be qualified in the area; and whether or not there is a potential legal issue if there is an accident and

RTOs are found to have provided inadequate OHS training by staff who have not received any specific OHS training.

4.6.2 Special needs in rural and regional communities

The Tasmanian report notes that the small size and the diverse nature of many regional and rural communities contributes to difficulties in obtaining minimum class sizes required by service providers, limited choices in the availability of training, and lower numbers of participants available for needed training courses. Regional and rural trainees miss out on a range of training-related services and in the site investigated, literacy/numeracy teachers are not being used to assist trainees having difficulty.

There appears to be a mismatch between local priorities and perceptions and the policy framework of training packages. The local perception is that training requires a needs-based, problem-solving approach, and that its direct applicability is more important than gaining a credential. However, the training packages are based on assumptions about the centrality of assessment and gaining formal credit at each level.

Older rural workers may have different literacy/numeracy needs, different practices, values and perceptions of training than their younger metropolitan counterparts. These cultural differences affect training and should be taken into account. A significant cultural change will be required if rural and regional people are to value training and make connections between literacy and numeracy provision and their own needs.

4.7 Funding issues

There were a number of funding issues identified in the research. They included limited funding for professional development; lack of consideration in current funding arrangements for those who want to be trained but do not have jobs; and lack of dedicated funding to assist the most vulnerable trainees. The South Australian report noted that those with lower level literacy/numeracy skills have been rendered invisible, in regard to teaching support and there is no funding available to provide them with additional literacy and numeracy support.

However, in many instances, 'special' additional support may be required if EBTs are to address the needs of workers with low literacy skills wishing to proceed to further AQF levels. Once the teachers and trainers have identified the underpinning language, literacy and numeracy skills within the relevant units of competence, developed plans for teaching those skills, and identified workers who need those skills in order to progress through their training, there are no dedicated resources (except in the case of WELL-funded programs) to fund the release of workers for literacy training. Several of the reports call for the redistribution of funds so that structured support and training can be provided to workers 'at risk' of missing out on training because of literacy needs.

It was noted in the Victorian report that funding based on student contact hours is not an adequate basis for training that incorporates literacy and

numeracy requirements. More flexible forms of funding are required that take into account the range of tasks that enterprise-based teachers carry out in negotiating, developing and carrying out training and support programs. They frequently have multiple roles and have to negotiate complex organisational structures and relationships.

4.8 Access and equity issues

The research highlighted a number of access and equity issues in relation to literacy and training packages.

Currently, unemployed people, workers seeking a career change and young people seeking a qualification prior to employment do not have access to training package programs. Yet some could clearly benefit from that training and the employment opportunities that it would open up. There is a need to strengthen institutional pathways into training package programs for those who are seeking employment in specific industries.

As already noted, workers/trainees may lack the literacy and numeracy skills required for successful demonstration of competence in industry standards at the required levels. Some seem to slip through the VET system in the same way as young people slip through the school system. In other cases, there are insufficient opportunities to build on existing skills levels in order to gain the skills necessary to go on to higher levels of training.

A number of reports noted concerns that training providers need to be aware that the level of communication skills required in training and assessment should not exceed those required on the job. The Tasmanian reported noted in this regard that this is a complex matter as training language includes discursive elements which may be outside the literacy practices of trainees, and added that trainers need to be able to review their provision of assessment services to make assessment more trainee-friendly, in line with the stated aims of ANTA.

It is necessary to ensure that experienced workers who are already skilled in the relevant industry competency standards are not disadvantaged by forms of assessment that require higher levels of literacy than those required by the job. At the same time, those with language, literacy or numeracy needs should be given opportunities to receive on-going literacy support and instruction to enable them to progress to higher levels of training and to participate more effectively in the long term. Oral assessment is appropriate in many contexts and helps to ensure that workers with literacy needs will not be disadvantaged. However, ways need to be found (outside of AQF assessments) to identify workers' literacy and numeracy needs and to offer opportunities for training and support.

The South Australian report identified a 'lack of rigour' in training package units which construct certificates and diploma awards. The current lack of clarity in the way the AQF framework articulates with higher education awards may act to disadvantage those who wish to exercise their right to continue to higher levels of training.

4.9 Literacy, numeracy and enterprise culture

None of the six projects set out to specifically explore the effects of workplace culture on training package implementation. However, the findings overall highlight the role that organisational culture plays in determining training and especially literacy and numeracy training outcomes.

While enterprise personnel in most cases were committed to training, there were no examples of organisations that regarded AQF training as contributing to the development of enterprises as 'learning organisations'. Training tended to be 'top-down' rather than understood as the inclusion of all levels of the organisation in the development of 'training cultures'. However, there were glimpses of the potential effects of AQF training on organisational cultures. For example, the Victorian study described the opening up of communications that occurred at one food processing factory following Level I training. The Queensland research found that the trend for increased skill development by workers was not only cost-effective, but also contributed to improved staff relations, motivation and productivity.

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Appendix: List of recommendations by State

New South Wales

- That professional development, as part of ANTA's long term strategy, be given immediate priority in the implementation of training packages, particularly the Certificate IV in Assessment and Workplace Training.
- That state training authorities require RTOs to demonstrate how they are going to include literacy and numeracy awareness into their delivery of the Certificate IV in Assessment and Workplace Training, and by implication, all training packages.
- That state training authorities require RTOs to demonstrate how they are going to include strategies for dealing with literacy and numeracy into their delivery of the Certificate IV in Assessment and Workplace Training.
- That state training authorities require RTOs to demonstrate how they are going to moderate assessments to ensure parity with other providers.
- That state training authorities require RTOs to demonstrate their knowledge of current resources and how they are going to ensure their trainers and assessors have access to them.
- That ANTA initiate the establishment of an 'Education ITAB' to regulate and monitor the standards of workplace trainers and assessors to improve quality and ensure parity of qualifications across providers.
- That ANTA consider a re-naming of 'training packages' to more accurately reflect their content, ie 'Standards or Assessment package'.

Queensland

- A national research project be funded by ANTA in 2000:
  - to determine why certain training packages are more attractive than others, and
  - to identify ways to effectively market training packages.
- The take up of civil construction traineeships and apprenticeships be monitored carefully to determine the success of the marketing and implementation of the civil construction training package.
- That there should be further research within the construction industry, across all levels (management to construction worker), to explore the commitment to the integration of literacy and numeracy in training and the development of a training/learning culture;
- That further research be conducted regarding the strengths and weaknesses of 'built-on' and 'built-in' approaches to the incorporation of literacy and numeracy competencies into technical competencies. While adult literacy/numeracy researchers and trainers would favour an integrated approach to literacy and numeracy competencies, the ABS survey figures

(1966) indicate that the nominal hours that have been allocated for the acquisition of competencies may be inadequate because of the limited skills of construction workers.

- That further research be conducted to identify models of good practice in the delivery of training based on the civil construction training package on motorway sites;
- That further research be conducted into:
- the practices of making explicit the literacy and numeracy knowledge and skills that underpin technical competencies during assessment processes; and
- the identification of models of good practice in assessing this literacy and numeracy knowledge and these skills;
- That in the next review of the civil construction standards framework, consideration be given to incorporating the following certificate level I units of competency into relevant technical units on the grounds that to separate these units provides a distorted view of their relevance to most other competencies:
    - BCG 100A: Carry out interactive workplace communication,
    - BCG1001A: Carry out OH&S requirements,
    - BCG1002A: Plan and organise work, and
    - BCG1004A: Carry out measurements and calculations.

South Australia

The development and maintenance of good assessment practice

- Wider dissemination of the ANTA/DEETYA resource materials available to assist with the incorporation of literacy and numeracy skills, and the building of capacity in construction of assessment tools for assessing Training Package competencies.
- Development of exemplars for good assessment practice to be available within RTO and industry settings.

The development and maintenance of quality Training Package delivery

- Development and dissemination of exemplars of good practice to assist trainers and coordinators to plan for Training Package delivery at program and session levels.
- Ongoing development of resources to assist in the interpretation of Training Package units of competence (for example, instruction guides, video and online materials) as well as workshops.

Visibility of literacy and numeracy competencies in Training Packages

- Provision of broader performance criteria for literacy/numeracy competence in the Range Statements and Evidence Guides of Training Package units of competence.
- Maintenance of close links with state and national literacy/numeracy experts. ITAB officers to facilitate these connections through representation on working party and Training Package development groups.

The provision of learning support for trainees

Learning support to be acknowledged in the budgetary arrangements for Training Package delivery and take account of the following:

- The literacy/numeracy expert working with 'at risk' trainees to support their learning.
- Staff training to develop an awareness of appropriate instruction strategies to support 'at risk' trainees.

The provision of professional development and support for trainers

- Workshop opportunities for industry trainers with VET literacy and numeracy experts to understand the implications of the inclusion of literacy and numeracy competencies in Training Package delivery.
- Wider dissemination of the DETYA/ANTA information kits developed to assist persons involved in the implementation of Training Packages understand the issues associated with the inclusion of literacy and numeracy competencies in Training Packages.

Supporting articulation across the Australian Qualifications Framework

- There is a need for a broader understanding of Training Packages across the training and education sectors. It is suggested that one way to approach the cultural shift that has taken place with the introduction of Training Packages is to provide clearly mapped and supported pathways for AQF certificates to diploma and degreed courses.

Strengthening institutional pathways into Training Package programs

- Provision of pre-employment courses to bridge unemployed persons into Training Package units in an area of work interest.
- Developing links with pre-vocational literacy/numeracy programs designed for people wanting to access vocational programs but without a work contract.

Victoria

Literacy in training packages

- The issue of how the underpinning literacy aspect of training could be made more visible, and more explicit in the endorsed components should be a central focus in the coming ANTA review of training packages.
- Further research is needed to clarify the relationship between literacy in training packages as a set of functional skills, and as a broad set of generic communication skills, so that training practices associated with each can be more clearly specified.
- More research is needed into 'oral literacy' and the oral aspects of literacy in training package training. The focus on 'oral literacy' must include an explicit focus on the language needs of NESB workers.
- There is obviously a great deal of incidental language and literacy learning that takes place when people are being supported and assisted to understand and acquire the competencies and prepare themselves for assessment. This incidental learning has a useful 'spin-off effect' on learning in other contexts. The relationship between settings and styles of instruction and incidental literacy and numeracy learning in industry training needs to be further researched.

Literacy and assessment

- ANTA consider developing research projects to contribute to answering the following questions: How do literacy and numeracy issues affect the validity and reliability of assessment? How do literacy and language needs affect the demonstration of competence at assessment? What sort of supports do assessors give to people with literacy and numeracy needs? How can language, literacy and numeracy needs identified at the point of assessment best be addressed in follow-up training?

Literacy in training packages and the WELL program

- ANTA fund research that explores the relationship between WELL-funded language and literacy programs and AQF training; the contribution that WELL programs make to the effective implementation of training packages; and whether or not literacy training strategies used in WELL programs could be applied to support literacy in AQF training generally.

Professional development

- More case studies of how teachers are addressing literacy in the context of training package implementation need to be written, so that approaches and strategies that teachers are currently developing in mediating different agendas can be made known and included in on-going professional development.

- Teachers entering VET from classroom settings should be encouraged and supported to take advantage of professional development through participating in Framing the Future projects, enrolling in post graduate study or VET teaching courses available in the TAFE system. Mentoring relationships between experienced and novice EBTs could be set in place and formalised as a professional development strategy.
- Support should be given to the development of EBT networks across industries and RTOs.
- Oral literacy, oral communication and ESL techniques be included as a focus in professional development for EBTs.

Funding

- In the light of the broad, developmental and consultancy role played by EBTs, further research is needed about the appropriateness of funding their work as student contact hours. Alternative, more flexible forms of funding of RTOs, better suited to the context of training package implementation, should be investigated.
- This research has highlighted the tension that is played out in the implementation of training packages between productivity outcomes and learning outcomes. Given that there is much research supporting the long-term benefits to companies of investment in training, there is a need for ANTA to continue to work with industry to popularise the (long-term) benefits of such investment.

Equity

- There is a need for an analysis to be made of the equity issues surrounding the inclusion of literacy in training packages. It is necessary to ensure that experienced workers who are already skilled in the relevant industry competency standards are not disadvantaged by forms of assessment that require higher levels of literacy than those required by the job. At the same time, those with language, literacy or numeracy needs should be given opportunities to receive on-going literacy support and instruction to enable them to progress to higher levels of training and to participate more effectively in the long term. Currently, these two principles of equity lie uneasily together.

Western Australia

- There needs to be a wider dissemination of relevant resource materials and professional development materials to literacy teachers and trade teachers.
- A stronger leadership role should be taken by the State Training Department who need to emphasise management's role in facilitating the inclusion of English language, literacy and numeracy competencies the

early stages of training package implementation.

- Further research needs to be conducted on the various guidelines and resourcing arrangements for determining student output and teacher workloads that are in operation within RTOs to ensure quality of learning and work outcomes are not diminished.
- Further research should be conducted into pathways for students between schools, TAFE institutions and the tertiary sector.

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